

ABSTRACT OF THE DISCLOSURE

An apparatus and method for controlling a traffic switching operation based on a service class as provided in an Ethernet-based network while taking into account a class of service (CoS). In a switching control method for controlling traffic flow of an Ethernet frame in a process for transmitting the Ethernet frame received from at least one source node to at least one destination node, the Ethernet frame containing predetermined priority information designated on a service class-by-class basis is received from the source node. The received Ethernet frame is buffered in a data buffer classified by the class of service (CoS) corresponding to the priority information based on the service class. A size of data currently buffered in the data buffer is compared with a predetermined threshold value necessary for discriminating a traffic congestion state. When the size of data currently buffered in the data buffer is equal to or larger than the threshold value, a predetermined PAUSE frame containing a value of the CoS is generated. The PAUSE frame is transmitted to the source node through an input port having transferred the Ethernet frame.